

What is claimed is:

1. A safety diaphragm for a diaphragm pump comprising at least two diaphragm layers (1, 2) each having opposing inner and outer surfaces and a peripheral edge and arranged so that the inner surfaces of the diaphragm layers are adjacent each other, said diaphragm from the peripheral edge towards a center having a clamping region (E) running in a peripheral direction for fixing the diaphragm in a pump and having an adjacent operational region (A) from the clamping region (E) toward the center; said diaphragm layers (1, 2) being connected to each other so that they are sealed against penetration of liquid and/or gas between the diaphragm layers and so that there is atmospheric or subatmospheric pressure between the diaphragm layers (1, 2); said diaphragm in one section of the clamping region (E) comprising a sensor region (S) where the diaphragm layers (1, 2) are formed so that, in the case of an increase in pressure between the diaphragm layers (1, 2), with an increase in the distance between the diaphragm layers, the layers in sensor region (S) deform more easily than in the other sections of the diaphragm.
2. The safety diaphragm of claim 1 wherein the peripheral edge is essentially circular.
3. A safety diaphragm according to claim 1 wherein a sensor is arranged within the sensor region (S) of the diaphragm, which sensor responds to a deformation of the diaphragm layers (1, 2) in the section of the sensor region (S).

4. A safety diaphragm according to claim 1 wherein the diaphragm layers (1, 2) in the section of the sensor region (S) have lower material thickness than in the other sections of the diaphragm.
5. A safety diaphragm according to claim 2 wherein the diaphragm layers (1, 2) in the section of the sensor region (S) have lower material thickness than in the other sections of the diaphragm.
6. A safety diaphragm according to claim 3 wherein the diaphragm layers (1, 2) in the section of the sensor region (S) have lower material thickness than in the other sections of the diaphragm.
7. A safety diaphragm according to claim 1 wherein the diaphragm layers (1, 2) in the section of the sensor region (S) have higher elasticity than in the other sections of the diaphragm.
8. A safety diaphragm according to claim 2 wherein the diaphragm layers (1, 2) in the section of the sensor region (S) have higher elasticity than in the other sections of the diaphragm.
9. A safety diaphragm according to claim 3 wherein the diaphragm layers (1, 2) in the section of the sensor region (S) have higher elasticity than in the other sections of the diaphragm.
10. A safety diaphragm according to claim 4 wherein the diaphragm layers (1, 2) in the section of the sensor region (S) have higher elasticity than in the other sections of the diaphragm.

11. A safety diaphragm according to claim 1 wherein the inner surfaces facing one another of the diaphragm layers (1, 2) in the section of the sensor region (S) are at a distance from one another, forming a cavity.
12. A safety diaphragm according to claim 2 wherein the inner surfaces facing one another of the diaphragm layers (1, 2) in the section of the sensor region (S) are at a distance from one another, forming a cavity.
13. A safety diaphragm according to claim 3 wherein the inner surfaces facing one another of the diaphragm layers (1, 2) in the section of the sensor region (S) are at a distance from one another, forming a cavity.
14. A safety diaphragm according to claim 4 wherein the inner surfaces facing one another of the diaphragm layers (1, 2) in the section of the sensor region (S) are at a distance from one another, forming a cavity.
15. A safety diaphragm according to claim 1 wherein the diaphragm, in the center of the operational region, has an actuating rod (5), with which the diaphragm layers (1, 2) are preferably tightly connected in form-locking manner.
16. A safety diaphragm according to claim 2 wherein the diaphragm, in the center of the operational region, has an actuating rod (5), with which the diaphragm layers (1, 2) are preferably tightly connected in form-locking manner.
17. A safety diaphragm according to claim 3 wherein the diaphragm, in the center of the operational region, has an actuating rod (5), with which the diaphragm layers (1, 2) are preferably tightly connected in form-locking manner.

18. A safety diaphragm according to claim 4 wherein the diaphragm, in the center of the operational region, has an actuating rod (5), with which the diaphragm layers (1, 2) are preferably tightly connected in form-locking manner.

19. A safety diaphragm according to claim 18 wherein a supporting disc (5') is provided on the actuating rod (5).